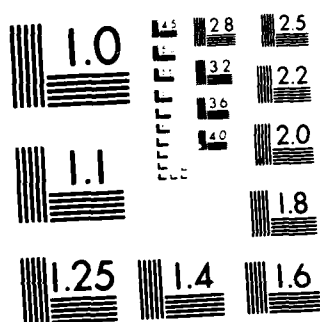


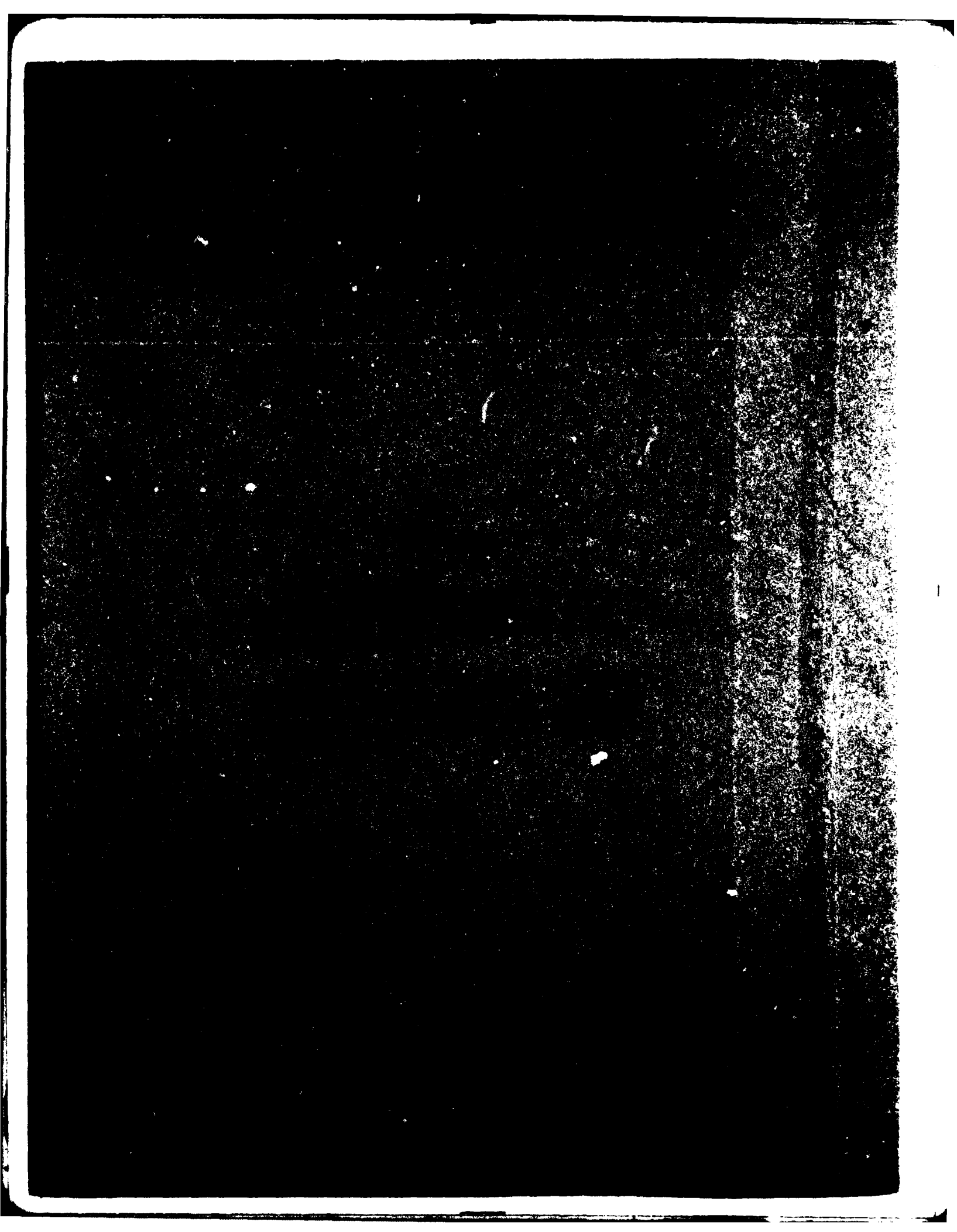
AD-A122 586 19318A MLRS MISSILE NUMBERS BN-110 BN-140 BN-174 ROUND 1/1
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DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 15 OCT 82
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318A MLRS, Missile Number BN-110, BN-140, BN-174, Round Number V-339/PQ-79, V-340/PQ-80, V-341/PQ-81 are presented in tabular form		

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DISCUSSION

DISCUSSION

1. Observations

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

at: (1) Low level wind data were obtained from Pilot-balloon observations

LC-33 2km
DON 2km

(2) Air structure data (rawinsonde) were collected at the following
Met Sites.

LC-37 0700 MDT
WSD 0825 MDT
LC-37 0930 MDT

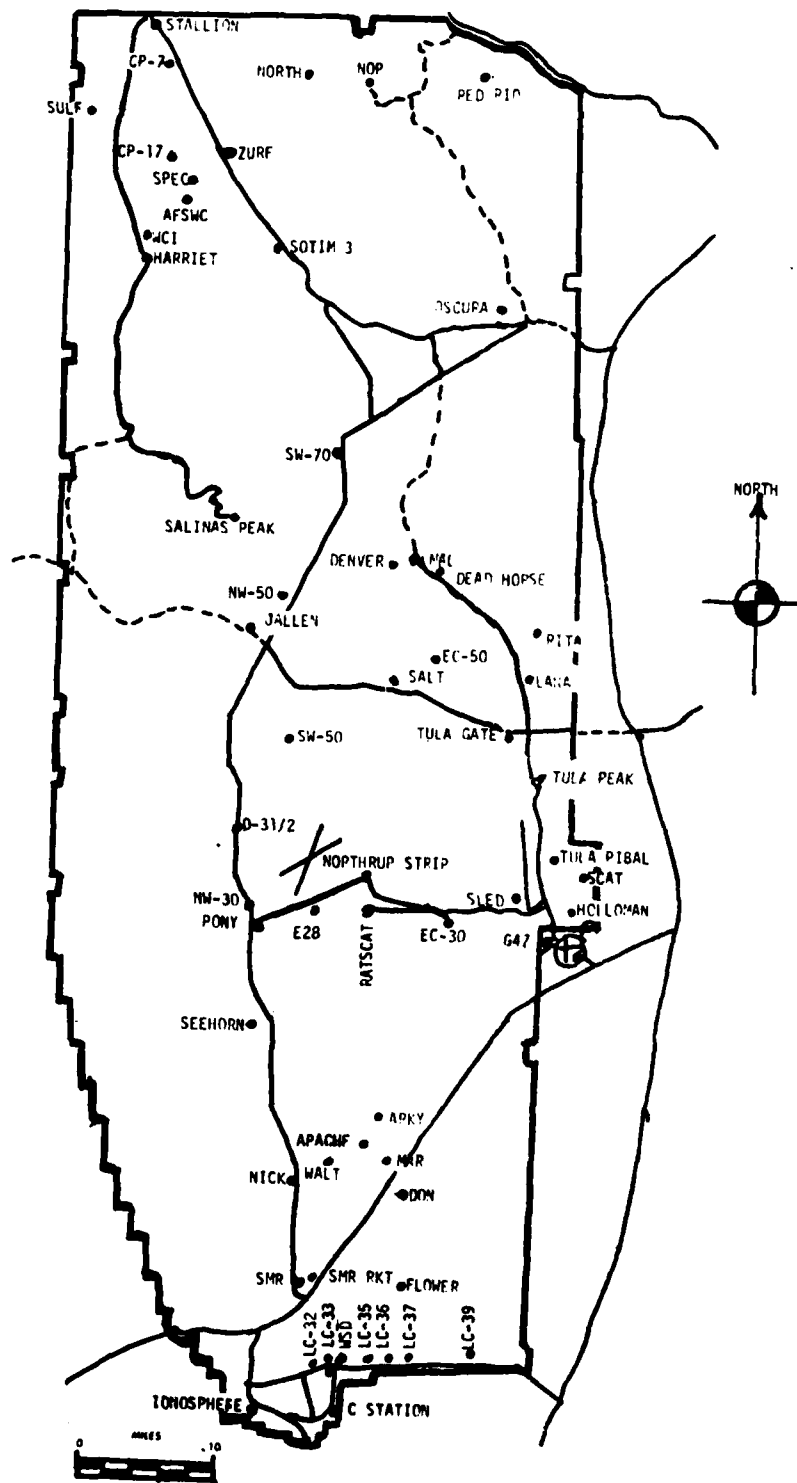
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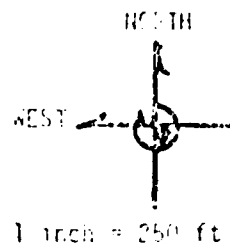
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WSMR METEOROLOGICAL SITES



LC-33
LAUNCH AREA



Y186,500

Line of Fire

Anemometer Pole #3

Anemometer Pole #2

MET
Tower

Y186,000

T-9 Radar

L-579A

L-519A

L-351A

L-350A

Anemometer Pole #1

Y185,500

Y485,000

Y485,500

Y486,000

Y185,000

L-500

PROJECT SURFACE OBSERVATION

TABLE 1									
STATION: LC-33 E & A									
DATE 15		Oct		82		X= 484.982 64 Y= 185.957.73 H= 3995.00			
DAY		MONTH		YEAR					
TIME	MDI	PRESSURE	TEMPERATURE	DEW POINT	RELATIVE	DENSITY	WIND	CHARACTER	VISIBILITY
		mbs	OF	OF	HUMIDITY	g/m ³	SPEED	kts	ITY
			OC	OC	%		deg	kts	
0940		888.8	14.1	4.7	53	1076		CALM	40

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	0	CU	6,000	0	AS	13,000	H ALQDS

PSYCHROMETRIC COMPUTATION

TIME:	0940
DRY BULB TEMP.	14.1
WET BULB TEMP.	9.0
WET BULB DEPR.	5.1
DEW POINT	4.7
RELATIVE HUMID.	53

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.29 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30		CALM	T-30		CALM	T-30		CALM
T-20		CALM	T-20		CALM	T-20		CALM
T-10		CALM	T-10		CALM	T-10		CALM
T0.0		CALM	T0.0		CALM	T0.0		CALM
T+10		CALM	T+10		CALM	T+10		CALM

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	258	01	T-30		CALM
T-20		CALM	T-20		CALM
T-10		CALM	T-10		CALM
T0.0		CALM	T0.0		CALM
T+10		CALM	T+10		CALM

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30		CALM	T-30		CALM
T-20		CALM	T-20		CALM
T-10		CALM	T-10		CALM
T0.0		CALM	T0.0		CALM
T+10		CALM	T+10		CALM

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 15 Oct 82

SITE: LC-33
 TIME: 0940 MDT
 WSTM COORDINATES:
 X= 484,837.34
 Y= 184,124.44
 H= 3,975.57

SITE: DON
 TIME 0940 MDT
 WSTM COORDINATES:
 X 511,988.37
 Y= 247,396.36
 H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		CALM
150	008	08
210	006	09
270	002	09
330	358	10
390	355	09
500	351	07
650	013	08
800	027	12
950	035	13
1150	041	14
1350	048	14
1550	063	12
1750	084	11
2000	091	08

Data obtained from a Double Theodolite
 tracked pilot-balloon observation

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	351	05
150	348	09
210	351	09
270	357	09
330	003	09
390	009	09
500	018	09
650	021	10
800	028	11
950	041	11
1150	061	10
1350	084	09
1550	084	09
1750	095	07
2000	103	06

Data obtained from a Single Theodolite
 tracked pilot-balloon observation

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGE

15 Oct 82

LC-37 0700 MDT	WSD 0825 MDT
METCM1324063	METCM1324064
151300124886	151460122888
00000000 27670886	00018002 28320838
01625015 28440875	01001016 28730878
02635008 28780849	02630011 29020852
03012009 28610810	03020010 28840813
04059016 28280763	04091018 28540766
05090019 27920718	05117020 28150721
06092008 27650675	06137007 27910679

LC-37 0930 MDT
 METCM1324063
 151550124887
 00000000 28630887
 01007011 28780876
 02634011 28830851
 03056013 28640811
 04118011 28320764
 05139015 27930719
 06172005 27780676

STATION ALTITUDE 4051.7 FEET MSL
15 OCT. 62 0700 HRS MDT
ASCENSION NO. 103

GEODETIC LEVEL DATA
280110103

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

LC-37

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AT DIFFERENTIAL	DEWPOINT CENTIGRADE	
885.5	4051.4	3.1	-1.8	70.0
877.3	4302.5	10.4	2.3	57.0
874.3	4396.6	12.4	2.4	49.0
850.0	5176.2	14.2	1.5	42.0
816.5	6288.1	12.8	-1.9	36.0
720.9	9680.2	5.9	-7.7	37.0
701.0	10468.9	3.9	-6.8	39.0
684.4	11069.8	2.9	-9.3	40.0
658.2	12107.9	2.7	-15.3	45.0
624.1	13515.6	.1	-15.2	36.0
607.5	14223.2	-1.8	-15.2	35.0
599.3	14578.6	-1.6	-17.1	30.0

STATION ALTITUDE 4051.77 FEET MSL
15 OCT. 62
ASCENSION NO. 103

UPPER AIR DATA
28-0100103
LC-57
TABLE 7

GEODETIC COORDINATES
32-40175 LAT DEG
106-31232 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
4051.4	885.5	3.1	70.0	1114.1	640.2	0.0	0.0	1.000275
4500.0	871.0	13.0	48.1	1057.2	660.0	5.9	1.7	1.000269
5000.0	855.4	13.9	43.6	1035.0	661.0	5.9	3.7	1.000262
5500.0	840.1	13.8	40.3	1017.0	660.9	5.9	5.6	1.000256
6000.0	825.1	13.2	37.6	1001.2	660.1	5.9	7.5	1.000249
6500.0	810.2	12.4	36.1	986.1	659.1	7.2	9.4	1.000244
7000.0	795.4	11.4	36.2	971.7	657.9	15.6	11.2	1.000239
7500.0	781.0	10.3	36.4	957.0	656.7	21.9	13.2	1.000235
8000.0	766.8	9.3	36.5	943.7	655.4	29.7	14.8	1.000231
8500.0	752.8	8.3	36.7	929.9	654.2	38.0	16.3	1.000226
9000.0	739.1	7.3	36.8	916.4	653.0	44.6	17.8	1.000222
9500.0	725.7	6.3	36.9	903.1	651.6	48.7	17.0	1.000218
10000.0	712.4	5.1	37.8	890.3	650.4	53.2	16.4	1.000215
10500.0	699.2	3.8	39.1	877.6	649.9	54.3	14.5	1.000211
11000.0	686.2	3.0	39.9	864.1	649.0	52.7	11.7	1.000208
11500.0	673.4	2.8	33.8	848.9	647.6	50.2	9.0	1.000202
12000.0	660.9	2.7	26.6	833.6	647.4	49.5	8.6	1.000196
12500.0	648.5	2.0	28.1	820.2	646.6	48.9	8.3	1.000193
13000.0	636.4	1.1	32.0	807.5	645.5			1.000191
13500.0	624.5	.1	35.0	795.0	644.4			1.000188
14000.0	612.7	-1.2	35.3	783.9	643.6			1.000185
14500.0	601.1	-1.9	31.1	771.1	642.0			1.000180

STATION ALTITUDE 4051.37 FEET MSL
15 OCT. 62 0700 HRS MDT
ASCENSION 110. 103

MANDATORY LEVELS
2880100103
LC-37

TABLE 8

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUMID. PERCENT	*IND. DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		WIND DIRECTION (DEGREES (TN))	SPEED KNOTS
850.0	5172.	14.2	1.5	42.	5.9	4.3
800.0	6844.	11.7	-2.8	30.	13.5	10.7
750.0	8604.	8.1	-5.8	37.	39.6	16.6
700.0	10458.	3.9	-8.0	39.	54.4	14.7
650.0	12427.	2.1	-14.7	25.	49.0	6.3
600.0	14531.	-1.9	-17.0	30.		

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

SIGNIFICANT LEVEL DATA
2830020505
WHITE SANDS
TABLE 9

STATION ALTITUDE 3989.00 FEET MSL
15 OCT. 62 0825 HRS MDT
ASCENSION NO. 505

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	MSL FEET	ATP DEWPOINT DEGREES CENTIGRADE	PERCENT
648.1	3089.0	7.5	59.0
572.2	4083.2	13.7	39.0
350.0	5197.1	14.3	34.0
334.3	5713.7	14.3	23.0
792.3	7136.1	10.8	33.0
761.5	8219.1	9.4	42.0
706.0	10490.7	7.4	57.0
682.2	11176.9	3.5	23.0
672.4	11563.0	4.1	19.0
653.6	12318.4	2.6	18.0
625.5	13480.0	-2.2	30.0
592.0	14927.0	-2.2	16.0
591.6	15391.7	-2.7	16.0
508.6	16834.0	-10.7	17.0
500.0	19265.7	-11.1	17.0
414.9	23885.6	-21.2	22.0
408.4	24269.4	-22.1	41.0
400.0	24771.8	-22.8	33.0
388.2	25491.8	-24.8	71.0
356.1	27541.3	-20.0	37.0
349.6	27974.5	-29.5	25.0
300.0	31509.7	-37.6	46.0
290.0	32276.8	-39.5	27.0
276.9	33115.0	-41.1	
250.0	35575.0	-46.7	
239.1	36544.4	-48.8	
228.9	37480.1	-40.0	
200.0	40364.0	-50.6	
185.1	41000.2	-50.1	
180.6	42401.8	-50.4	
150.5	45172.2	-63.0	
150.0	46284.8	-73.4	
145.5	46905.0	-64.6	
130.5	47752.9	-64.8	
137.9	47985.9	-63.3	
125.8	49832.0	-66.6	
110.1	51047.5	-65.2	
114.0	51702.3	-65.0	
107.2	53039.4	-66.7	
100.0	54425.3	-77.1	

STATION ALTITUDE 3989.00 FEET MSL
 15 OCT. 82 0825 HRS MDT
 ASCENSION NO. 505

SIGNIFICANT LEVEL DATA
 280002050J
 WHITE SANDS
 TABLE 9 Cont'd

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		RELATIVE PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
70.0 61569.7	-64.9		
50.0 60434.1	-59.6		
41.8 72162.0	-56.7		
30.0 79227.7	-49.7		
28.6 80250.0	-51.2		
20.0 80050.3	-45.6		
16.2 92731.3	-42.6		
13.6 96630.9	-44.2		
10.0 103503.5	-41.6		
8.6 106898.1	-41.2		

STATION ALTITUDE 3900.0 FEET MSL
15 OCT. 62 0825 HRS MDT
ASCENSION IS. 505

UPPER AIR DATA
2800020500
WHITE SANDS
TABLE 10

GEOCENTRIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
3900.0	880.1	7.3	59.0	1100.3	650.3	10.0	1.000274
4000.0	897.7	7.4	58.6	1099.3	650.4	9.6	1.000274
4500.0	871.7	13.7	38.9	1055.7	660.7	4.4	1.000263
5000.0	850.1	14.1	35.4	1035.5	661.1	2.5	1.000257
5500.0	840.8	14.3	27.6	1010.9	661.2	1.5	1.000247
6000.0	825.7	13.6	25.0	1001.3	660.3	.9	1.000241
6500.0	810.8	12.4	28.5	987.4	650.9	12.8	1.000239
7000.0	790.2	11.1	32.0	973.7	657.3	26.0	1.000237
7500.0	741.9	10.3	36.0	950.7	650.6	40.0	1.000235
8000.0	767.6	9.7	40.2	943.2	650.0	50.6	1.000233
8500.0	753.6	8.7	43.9	929.3	654.6	57.2	1.000231
9000.0	739.8	7.3	47.2	910.3	653.3	62.3	1.000227
9500.0	720.2	6.0	50.5	894.0	651.7	65.0	1.000224
10000.0	712.8	4.7	53.8	891.6	650.2	67.4	1.000221
10500.0	699.7	3.4	56.5	879.3	640.0	68.7	1.000214
11000.0	680.7	3.5	31.8	863.7	640.4	70.5	1.000205
11500.0	674.0	4.0	19.7	846.4	643.9	70.2	1.000196
12000.0	661.5	3.2	18.4	833.1	647.9	70.2	1.000193
12500.0	649.1	2.2	19.9	820.7	640.7	79.9	1.000190
13000.0	637.0	1.0	25.0	800.7	635.3	67.8	1.000188
13500.0	625.0	-2.2	29.8	790.9	649.0	92.6	1.000187
14000.0	613.3	-2.2	25.0	782.0	643.9	90.2	1.000182
14500.0	601.7	-2.2	20.1	767.4	643.9	84.4	1.000177
15000.0	590.4	-6.6	16.6	754.1	643.4	51.0	1.000173
15500.0	579.2	-3.0	16.0	740.3	640.5	40.7	1.000170
16000.0	568.0	-4.1	16.2	735.1	637.2	19.6	1.000168
16500.0	557.0	-5.3	16.3	724.1	637.8	42.5	1.000165
17000.0	546.3	-6.4	16.5	713.2	630.4	46.6	1.000162
17500.0	535.7	-7.6	16.6	702.5	635.0	43.2	1.000160
18000.0	525.4	-8.8	16.8	692.0	635.0	30.9	1.000157
18500.0	515.3	-9.9	16.9	691.7	632.2	32.6	1.000154
19000.0	505.3	-10.9	17.0	670.9	631.1	25.6	1.000152
19500.0	495.3	-11.6	17.3	659.5	630.1	19.3	1.000149
20000.0	485.4	-12.7	17.3	649.0	625.0	5.9	1.000147
20500.0	475.7	-13.4	18.3	630.6	617.3	57.2	1.000144
21000.0	460.2	-14.9	18.9	620.7	610.2	32.6	1.000142
21500.0	450.9	-16.0	19.4	616.7	614.6	54.7	1.000140
22000.0	447.7	-17.1	20.0	600.9	620.9	50.2	1.000137
22500.0	430.8	-19.2	20.5	594.3	622.2	50.2	1.000135
23000.0	430.0	-19.3	21.0	589.9	620.6	290.1	1.000133

STATION ALTITUDE 3983.0 FEET MSL
15 OCT. 62 0825 HRS MDT
ASCENSION NO. 505

UPPER AIR DATA
20002050Z

WHITE SAUND

TABLE 10 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM ³	SELD OF SOUND METERS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.4	-20.4	21.6	580.6	619.5	292.0	20.3	1.000131
24000.0	413.0	-21.5	27.6	571.4	610.1	280.9	20.9	1.000129
24500.0	404.5	-22.4	51.1	561.8	617.0	291.3	22.0	1.000128
25000.0	396.2	-23.4	65.5	552.4	613.8	293.0	23.2	1.000127
25500.0	388.1	-24.8	70.0	544.1	614.1	291.8	23.9	1.000125
26000.0	380.0	-25.8	62.6	535.0	612.8	290.7	24.7	1.000122
26500.0	372.1	-26.9	54.3	526.1	611.5	290.1	26.1	1.000119
27000.0	364.3	-27.9	46.0	517.3	611.2	290.3	27.7	1.000117
27500.0	356.7	-28.9	37.7	508.7	610.9	291.0	30.1	1.000115
28000.0	349.2	-29.6	25.0	499.3	610.1	292.4	32.5	1.000112
28500.0	341.7	-30.7	25.1	491.0	610.6	290.4	35.5	1.000110
29000.0	334.4	-31.8	25.3	482.7	610.2	280.7	38.3	1.000108
29500.0	327.3	-33.0	25.4	474.7	603.8	287.5	39.5	1.000106
30000.0	320.3	-34.1	25.6	466.7	602.3	280.3	40.7	1.000105
30500.0	313.4	-35.3	25.7	459.0	600.9	285.5	41.9	1.000103
31000.0	306.7	-36.4	25.0	451.3	599.4	284.9	43.5	1.000101
31500.0	300.1	-37.6	26.0	443.3	597.0	285.1	46.6	1.000099
32000.0	293.6	-38.8	26.6	435.4	595.4	285.0	49.0	1.000098
32500.0	287.1	-39.8	21.2**	428.7	593.1	284.0	48.6	1.000096
33000.0	280.8	-40.6	21.2**	420.7	594.1	283.1	48.4	1.000094
33500.0	274.6	-41.6	21.2**	413.0	592.9	282.4	48.6	1.000092
34000.0	268.5	-42.0	21.2**	406.0	591.3	282.1	49.6	1.000090
34500.0	262.5	-44.0	21.2**	399.1	589.7	282.3	51.8	1.000089
35000.0	256.5	-45.3	21.2**	392.3	588.1	282.0	52.8	1.000087
35500.0	250.8	-46.5	21.2**	385.0	586.5	283.0	53.0	1.000086
36000.0	245.2	-47.6	21.2**	378.0	585.1	284.4	53.6	1.000084
36500.0	239.6	-48.7	21.2**	371.9	583.6	280.4	54.5	1.000083
37000.0	234.1	-49.3	21.2**	364.3	582.9	287.4	55.3	1.000081
37500.0	228.8	-49.8	21.2**	356.6	582.2	288.0	56.1	1.000079
38000.0	223.4	-50.7	21.2**	349.9	581.1	280.3	56.8	1.000078
38500.0	218.3	-51.5	21.2**	343.0	580.0	288.4	57.5	1.000076
39000.0	213.2	-52.3	21.2**	336.4	578.9	288.5	57.8	1.000075
39500.0	208.3	-53.2	21.2**	329.8	577.4	288.5	58.0	1.000073
40000.0	203.4	-54.0	21.2**	323.4	576.7	280.1	56.7	1.000072
40500.0	198.7	-54.9	21.2**	317.2	575.5	287.0	54.7	1.000071
41000.0	194.0	-56.0	21.2**	311.2	574.1	287.0	53.7	1.000069
41500.0	189.4	-57.1	21.2**	305.4	572.7	287.9	52.9	1.000068
42000.0	185.0	-58.1	21.2**	299.0	571.3	288.0	53.3	1.000067
42500.0	180.6	-58.4	21.2**	292.9	570.9	287.9	54.2	1.000065
43000.0	176.2	-59.3	21.2**	287.0	569.7	280.3	53.5	1.000064

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
15 OCT. 82
ASCENSION NO. 505

UPPER AIR DATA
2890020500
WHITE SANDS
TABLE 10 Cont'd

GLOTTAL COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TND)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	172.0	-60.1		281.2	568.0	208.9	51.8	1.000063
44000.0	167.8	-61.0		275.0	567.5	290.8	49.3	1.000061
44500.0	163.8	-61.8		270.0	566.3	293.3	46.5	1.000050
45000.0	159.0	-62.7		264.0	565.2	293.0	43.9	1.000059
45500.0	150.0	-63.1		250.7	564.0	293.3	41.3	1.000058
46000.0	152.2	-63.3		252.0	564.4	260.9	39.2	1.000056
46500.0	148.4	-63.8		247.0	563.7	279.1	37.8	1.000055
47000.0	144.6	-64.6		241.9	562.0	270.3	38.2	1.000054
47500.0	141.3	-64.7		236.1	562.4	274.6	38.8	1.000053
48000.0	137.8	-64.3		230.0	564.3	275.4	36.9	1.000051
48500.0	134.4	-64.2		224.1	563.1	277.5	33.8	1.000050
49000.0	131.1	-65.1		219.0	561.9	277.1	30.5	1.000049
49500.0	127.9	-66.0		215.1	560.7	274.1	27.0	1.000048
50000.0	124.8	-66.4		210.2	560.1	272.0	26.1	1.000047
50500.0	121.7	-65.9		204.5	560.9	272.2	26.6	1.000046
51000.0	118.7	-65.3		193.0	561.6	274.0	26.9	1.000044
51500.0	115.8	-65.1		193.0	562.0	276.7	27.0	1.000043
52000.0	112.9	-65.4		189.3	561.0	277.6	26.6	1.000042
52500.0	110.1	-66.0		185.2	560.7	278.0	26.0	1.000041
53000.0	107.4	-66.6		181.2	559.0	279.4	24.0	1.000040
53500.0	104.8	-66.8		176.9	559.6	281.8	21.3	1.000039
54000.0	102.2	-67.0		172.6	559.4	287.1	18.2	1.000038
54500.0	99.6	-67.1		168.4	559.3	297.3	15.1	1.000038
55000.0	97.2	-66.9		164.1	559.5	307.4	12.5	1.000037
55500.0	94.0	-66.8		160.0	559.7	311.0	10.0	1.000036
56000.0	92.4	-66.6		155.9	559.9	314.1	7.4	1.000035
56500.0	90.2	-66.5		152.0	560.1	294.9	5.1	1.000034
57000.0	87.9	-66.3		148.1	560.3	258.0	4.0	1.000033
57500.0	85.8	-66.2		144.3	560.5	241.2	4.9	1.000032
58000.0	83.7	-66.0		140.7	560.7	230.1	0.0	1.000031
58500.0	81.6	-65.8		137.1	560.9	222.5	6.1	1.000031
59000.0	79.6	-65.7		133.0	561.1	215.1	6.1	1.000030
59500.0	77.6	-65.5		130.2	561.3	212.0	6.0	1.000029
60000.0	75.7	-65.4		126.9	561.5	212.9	5.7	1.000028
60500.0	73.8	-65.2		123.7	561.8	231.0	5.5	1.000028
61000.0	72.0	-65.1		120.6	562.0	250.7	6.7	1.000027
61500.0	70.2	-64.9		117.5	562.2	271.0	8.0	1.000026
62000.0	68.5	-64.6		114.3	562.0	274.1	8.5	1.000025
62500.0	66.9	-64.2		111.5	563.2	275.0	7.9	1.000025
63000.0	65.3	-63.8		108.0	563.7	271.1	4.5	1.000024

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

UPPER AIR DATA
2800020505
WHITE SANDS
TABLE 10 Cont'd

STATION ALTITUDE 3489.00 FEET MSL
13 OCT. 62 0825 HRS MDT
ASCENSION NO. 505

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
63500.0	63.7	-63.4		105.8	564.2	243.1	1.000024
64000.0	62.1	-63.0		103.0	564.7	151.3	1.000023
64500.0	60.6	-62.6		100.3	565.2	117.0	1.000022
65000.0	59.2	-62.3		97.7	565.8	117.2	1.000022
65500.0	57.7	-61.9		95.2	566.3	118.2	1.000021
66000.0	56.3	-61.5		92.7	566.8	118.2	1.000021
66500.0	55.0	-61.1		90.3	567.3	117.4	1.000020
67000.0	53.6	-60.7		88.0	567.8	116.2	1.000020
67500.0	52.3	-60.3		85.7	568.3	114.6	1.000019
68000.0	51.1	-59.9		83.4	568.9	113.6	1.000019
68500.0	49.8	-59.5		81.3	569.4	113.1	1.000018
69000.0	48.7	-59.2		79.2	569.9	112.5	1.000018
69500.0	47.5	-58.8		77.2	570.4	112.6	1.000017
70000.0	46.4	-58.4		75.2	570.9	167.2	1.000017
70500.0	45.3	-58.0		73.3	571.4	291.8	1.000016
71000.0	44.2	-57.6		71.4	572.0	292.4	1.000016
71500.0	43.2	-57.2		69.6	572.5	292.5	1.000015
72000.0	42.1	-56.8		67.6	573.0	290.3	1.000015
72500.0	41.1	-56.4		66.1	573.6	287.5	1.000015
73000.0	40.2	-55.9		64.4	574.3	284.9	1.000014
73500.0	39.3	-55.4		62.8	574.9	282.9	1.000014
74000.0	38.3	-54.9		61.2	575.6	280.8	1.000014
74500.0	37.5	-54.4		59.6	576.2	275.3	1.000013
75000.0	36.6	-53.9		58.1	576.9	268.1	1.000013
75500.0	35.7	-53.4		56.7	577.5	270.9	1.000013
76000.0	34.9	-52.9		55.2	578.2	275.4	1.000012
76500.0	34.1	-52.4		53.8	578.8	274.6	1.000012
77000.0	33.3	-51.9		52.4	579.5	268.0	1.000012
77500.0	32.5	-51.4		51.1	580.1	263.4	1.000011
78000.0	31.8	-50.9		49.8	580.6	261.1	1.000011
78500.0	31.0	-50.4		48.6	581.4	259.5	1.000011
79000.0	30.3	-49.9		47.3	582.1	268.1	1.000011
79500.0	29.6	-50.1		46.3	581.6	296.3	1.000010
80000.0	28.9	-50.8		45.4	580.9	323.2	1.000010
80500.0	28.3	-51.0		44.4	580.0	337.7	1.000010
81000.0	27.6	-50.7		43.3	581.1	349.8	1.000010
81500.0	27.0	-50.3		42.2	581.6	352.8	1.000009
82000.0	26.4	-49.9		41.2	582.0	342.8	1.000009
82500.0	25.8	-49.6		40.2	582.5	326.2	1.000009
83000.0	25.2	-49.2		39.2	583.0	317.0	1.000009

STATION ALTITUDE 3949.20 FEET MSL
15 OCT. 82
ASCENSION NO. 505

UPPER AIR DATA
2880020505
WHITE SANDS
TABLE 10 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	24.6	-48.9		36.3	583.4	310.6	4.2	1.000009
84000.0	24.1	-48.5		37.4	583.9	304.5	4.3	1.000008
84500.0	23.5	-48.2		36.4	584.4	298.7	4.2	1.000008
85000.0	23.0	-47.8		35.6	584.8	292.8	4.2	1.000008
85500.0	22.5	-47.4		34.7	585.3	284.0	4.6	1.000008
86000.0	22.0	-47.1		33.9	585.8	276.0	5.1	1.000008
86500.0	21.5	-46.7		33.0	586.2	269.6	5.7	1.000007
87000.0	21.0	-46.4		32.2	586.7	264.2	5.7	1.000007
87500.0	20.5	-46.0		31.5	587.2	258.5	5.5	1.000007
88000.0	20.0	-45.6		30.7	587.6	252.4	5.4	1.000007
88500.0	19.6	-45.3		30.0	588.0	247.6	5.2	1.000007
89000.0	19.2	-45.0		29.3	588.5	242.9	5.2	1.000007
89500.0	18.7	-44.7		28.6	588.9	238.2	5.1	1.000006
90000.0	18.3	-44.4		27.9	589.3	233.4	5.9	1.000006
90500.0	17.9	-44.0		27.2	589.7	225.0	7.0	1.000006
91000.0	17.5	-43.7		26.6	590.1	261.1	8.2	1.000006
91500.0	17.1	-43.4		26.0	590.5	264.1	9.7	1.000006
92000.0	16.7	-43.1		25.3	590.9	260.0	11.1	1.000006
92500.0	16.4	-42.7		24.8	591.3	267.4	12.6	1.000005
93000.0	16.0	-42.7		24.2	591.4	268.2	13.4	1.000005
93500.0	15.7	-42.9		23.7	591.1	268.6	13.9	1.000005
94000.0	15.3	-43.1		23.2	590.9	269.4	14.4	1.000005
94500.0	15.0	-43.3		22.7	590.6	260.6	14.0	1.000005
95000.0	14.6	-43.5		22.2	590.3	262.5	13.3	1.000005
95500.0	14.3	-43.7		21.7	590.1	257.6	12.7	1.000005
96000.0	14.0	-43.9		21.3	589.8	253.1	12.6	1.000005
96500.0	13.7	-44.1		20.8	589.5	243.0	12.8	1.000005
97000.0	13.4	-44.1		20.3	589.7	245.1	13.1	1.000005
97500.0	13.1	-43.9		19.9	589.9	247.2	13.8	1.000004
98000.0	12.8	-43.7		19.4	590.1	252.8	14.9	1.000004
98500.0	12.5	-43.5		19.0	590.4	257.5	16.2	1.000004
99000.0	12.2	-43.3		18.5	590.6	259.0	17.0	1.000004
99500.0	12.0	-43.1		18.1	590.9	258.1	17.5	1.000004
100000.0	11.7	-42.9		17.7	591.1	257.2	17.9	1.000004
100500.0	11.4	-42.7		17.3	591.4	257.5	18.2	1.000004
101000.0	11.2	-42.5		16.9	591.6	259.0	18.4	1.000004
101500.0	10.9	-42.4		16.5	591.8	260.5	18.5	1.000004
102000.0	10.7	-42.2		16.1	592.1	263.6	18.6	1.000004
102500.0	10.5	-42.0		15.6	592.3	269.4	18.6	1.000004
103000.0	10.2	-41.8		15.4	592.6	275.0	18.8	1.000003

STATION ALTITUDE 3989.00 FEET MSL
 15 OCT. 42 0825 HRS MDT
 ASCENSION NO. 505

UPPER AIR DATA
 2600020505
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 10 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KIOTS	WIND DATA DIRECTION (DEGREES(TN))	SPEED KIOTS	INDEX OF REFRACTION
103500.0	10.0	-41.6		15.0	592.8	275.5	19.0	1.0000003
104000.0	9.8	-41.5		14.7	592.9	272.7	19.1	1.0000003
104500.0	9.6	-41.5		14.4	593.0	269.9	19.3	1.0000003
105000.0	9.4	-41.4		14.1	593.0			1.0000003
105500.0	9.2	-41.4		13.8	593.1			1.0000003
106000.0	9.0	-41.3		13.4	593.2			1.0000003
106500.0	8.8	-41.2		13.1	593.3			1.0000003

STATION ALTITUDE 1989.00 FEET MSL
15 OCT. 42
ASCENSION 1.0. 505

MANDATORY LEVELS
2000020505
WHITE SANDS
TABLE 11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
150.0	5193.	14.3	-1.3	34.	2.0	0.4
100.0	6665.	11.5	-5.0	31.	22.0	11.2
750.0	8625.	9.3	-3.0	45.	50.7	17.9
700.0	10490.	3.4	-4.3	57.	00.7	10.7
650.0	12451.	2.2	-14.0	20.	79.1	0.5
600.0	14557.	-0.2	-20.7	19.	60.8	2.5
550.0	16816.	-0.0	-27.4	10.	40.0	0.0
500.0	19238.	-11.1	-31.3	17.	22.2	5.8
450.0	21864.	-16.8	-34.5	20.	310.0	18.7
400.0	24730.	-22.8	-27.9	63.	292.4	22.7
350.0	27696.	-29.5	-42.9	26.	292.7	32.1
300.0	31447.	-37.6	-46.9	20.	285.1	40.6
250.0	35497.	-46.7			283.0	53.1
200.0	40266.	-54.6			267.8	55.4
175.0	43036.	-59.5			208.4	53.0
150.0	46164.	-63.4			262.0	30.4
125.0	49816.	-66.5			272.0	26.0
100.0	54257.	-67.1			295.1	15.7
80.0	58690.	-65.7			217.2	6.1
70.0	61357.	-64.9			271.2	0.1
60.0	64460.	-62.5			116.4	5.5
50.0	68176.	-59.6			113.2	0.7
40.0	72795.	-55.8			284.7	2.7
30.0	78888.	-49.7			277.9	5.4
25.0	82794.	-49.1			316.0	4.2
20.0	87636.	-45.6			252.3	5.4
15.0	93977.	-43.3			267.6	14.2
10.0	102941.	-41.6			275.8	19.0

STATION ALTITUDE 4051.37 FEET MSL
15 OCT. 62
ASCENSION NO. 104

GEODETIC COORDINATES
32.40175 LAT DEG
106.51252 LON DEG

SIGNIFICANT LEVEL DATA
280010010,
LC-27

TABLE 12

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
886.5 4051.4	12.4 .5	44.0
882.6 4172.8	12.6 -.6	40.0
878.5 4301.5	14.4 .0	39.0
850.0 5216.6	14.7 -1.4	33.0
822.2 6137.0	13.1 -2.0	33.0
783.4 7467.2	11.3 -2.8	37.0
736.3 9154.5	6.0 -2.8	51.0
717.9 9835.5	5.0 -4.3	51.0
700.0 10512.9	5.0 -7.8	39.0
681.9 11215.0	4.2 -13.0	26.0
656.3 12236.4	2.9 -12.1	32.0
622.1 13652.4	-2.3 -14.2	34.0
597.5 14710.4	-1.8 -20.7	22.0

STATION ALTITUDE 4051.17 FEET MSL
15 OCT. 62
ASCENSION NO. 104

0930 HRS MDT

UPPER AIR DATA
280130Z104
LC-37

TABLE 13

GEOMETRIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	WIND DATA DIRECTION KNOTS	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	886.5	12.4	44.0	1078.6	0	0	1.000270
4500.0	872.2	14.5	37.7	1053.0	33.6	2.0	1.000263
5000.0	856.7	14.6	34.4	1034.4	33.6	4.2	1.000257
5500.0	841.3	14.2	33.0	1017.5	33.6	6.5	1.000251
6000.0	826.3	13.3	33.0	1002.4	33.6	8.7	1.000247
6500.0	811.4	12.6	34.1	986.9	33.6	10.9	1.000243
7000.0	796.8	11.9	35.6	971.4	38.9	11.9	1.000240
7500.0	782.5	11.2	37.3	956.3	49.5	12.0	1.000236
8000.0	768.2	9.8	41.4	943.4	59.5	12.5	1.000234
8500.0	754.2	8.4	45.6	930.8	66.8	12.4	1.000231
9000.0	740.5	7.0	49.7	918.4	73.9	12.4	1.000229
9500.0	726.9	5.8	51.0	905.6	80.3	12.3	1.000225
10000.0	713.5	5.0	48.1	891.6	81.8	10.8	1.000219
10500.0	700.3	5.0	39.2	875.5	83.9	9.3	1.000212
11000.0	687.4	4.9	30.0	860.1	86.4	8.3	1.000204
11500.0	674.7	4.3	27.7	846.1	88.7	7.8	1.000200
12000.0	662.1	3.3	30.6	833.1	91.3	7.4	1.000197
12500.0	649.8	2.3	32.4	820.7			1.000194
13000.0	637.6	1.2	33.1	808.7			1.000191
13500.0	625.7	.0	33.8	796.9			1.000188
14000.0	613.9	-.8	30.1	784.4			1.000184
14500.0	602.3	-1.5	24.4	771.6			1.000179

STATION ALTITUDE 4051.37 FEET MSL
 15 OCT. 82 0930 HRS MDT
 ASCENSION NO. 104

MANDATORY LEVELS
 28R018U104
 LC-37
 TABLE 14

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
850.0	5213.	14.7	-1.4	33.	33.6	5.2
800.0	6886.	12.1	-2.8	35.	36.5	12.0
750.0	8648.	8.0	-2.7	47.	68.9	12.4
700.0	10502.	5.0	-7.8	39.	84.0	9.3
650.0	12479.	2.3	-12.5	32.		
600.0	14584.	-1.6	-19.9	23.		